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- 1 [A proof of the security of quantum key distribution \(extended abstract\)](#)
 Eli Biham, Michel Boyer, P. Oscar Boykin, Tal Mor, Vwani Roychowdhury
 May 2000 **STOC '00: Proceedings of the thirty-second annual ACM symposium**

Publisher: ACM [Request Permissions](#)

 Full text available: [Pdf](#) (968.70 KB)

 Additional Information: [full citation](#), [references](#),

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 38, Citation

- 2 [Quantum public key distribution reinvented](#)

[Charles H. Bennett, Gilles Brassard](#)

 July 1987 **SI GACT News**, Volume 18 Issue 4

Publisher: ACM

 Full text available: [Pdf](#) (124.56 KB) Additional Information: [full citation](#), [references](#), [cited](#)
Bibliometrics: Downloads (6 Weeks): 6, Downloads (12 Months): 54, Citation

- 3 [Quantum cryptography: A survey](#)

[Dagmar Bruss, Gábor Erdélyi, Tim Meyer, Tobias Priege, Jörg Rothe](#)

 July 2007 **Computing Surveys (CSUR)**, Volume 39 Issue 2

Publisher: ACM [Request Permissions](#)

 Full text available: [Pdf](#) (335.26 KB)

 Additional Information: [full citation](#), [abstract](#),

Bibliometrics: Downloads (6 Weeks): 104, Downloads (12 Months): 873, Citation

We survey some results in quantum cryptography. After a brief introduction we provide the quantum-mechanical background needed to present some of quantum cryptography. In particular, we review quantum ...

Keywords: Quantum bit commitment, quantum cryptography, quantum

- 4 [Quantum cryptography in practice](#)

[Chip Elliott, David Pearson, Gregory Troxel](#)

 August 2003 **SI GCOMM '03: Proceedings of the 2003 conference on Applications, architectures, and protocols for computer communications**
Publisher: ACM [Request Permissions](#)

 Full text available: [Pdf](#) (809.93 KB)

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Bibliometrics: Downloads (6 Weeks): 40, Downloads (12 Months): 299, Citation

BBN, Harvard, and Boston University are building the DARPA Quantum I

that delivers end-to-end network security via high-speed Quantum Key Network against sophisticated eavesdropping attacks. ...

Keywords: IPsec, cryptographic protocols, error correction, key agreement, amplification, quantum cryptography, quantum key distribution, secure

5 Quantum information: opportunities and challenges or "What's this q have to do with cyber security?"



Ryan Bennink

May 2008

CSI IRW '08: Proceedings of the 4th annual workshop on Cyber intelligence research: developing strategies to meet the cyber intelligence challenges ahead

Publisher: ACM

Full text available: Pdf (98.67 KB)

Additional Information: [full citation](#), [appendix terms](#)

Bibliometrics: Downloads (6 Weeks): 12, Downloads (12 Months): 77, Citations

Modern society is shaped by the ability to transmit, manipulate, and store. Although we tend to think of information as abstract, information is physical process. How then should we understand ...

Keywords: one time pad, quantum algorithms, quantum computing, quantum distribution

6 Unconditional security in quantum cryptography



Dominic Mayers

May 2001

Journal of the ACM (JACM), Volume 48 Issue 3

Publisher: ACM

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Full text available: Pdf (394.84 KB)

Additional Information: [full citation](#), [abstract](#),

Bibliometrics: Downloads (6 Weeks): 29, Downloads (12 Months): 246, Citations

Basic techniques to prove the unconditional security of quantum cryptography applied to a quantum key distribution protocol proposed by Bennett and considers a practical variation on the protocol in ...

Keywords: quantum cryptography, quantum information theory, unconditional

7 25 years of quantum cryptography



Gilles Brassard, Claude Crépeau

September 1996

SIGACT News, Volume 27 Issue 3

Publisher: ACM




Full text available: Pdf (918.87 KB)

Additional Information: [full citation](#), [abstract](#),

Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 227, Citations

The fates of *SIGACT News* and Quantum Cryptography are inseparably linked. Stephen Wiesner's invention of "conjugate coding" is unknown but it came in the premier issue of *SIGACT News*--or ...




8 Limits on the ability of quantum states to convey classical messages

-  Ashwin Nayak, Julia Salzman
 January 2006 **Journal of the ACM (JACM)** , Volume 53 Issue 1
Publisher: ACM  [Request Permissions](#)
 Full text available:  Pdf (171.65 KB) **Additional Information:** [full citation](#), [abstract](#),
Bibliometrics: Downloads (6 Weeks): 7, Downloads (12 Months): 76, Citation

We revisit the problem of conveying classical messages by transmitting optimal bounds on the number of quantum bits required for this task. M problem, and on other communication tasks in ...



Keywords: Communication complexity, Holevo bound, Inner Product fu quantum channel, information theory, lower bounds, privacy amplificati shared entanglement, superdense coding

9 [Quantum mechanical approaches to information processing](#)

-  Steven Praver
 June 2006 **ICS '06: Proceedings of the 20th annual international confer**
Publisher: ACM  [Request Permissions](#)
 Full text available:  Pdf (295.88 KB) **Additional Information:** [full citation](#), [abstract](#),
Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 55, Citation




Unless new paradigms can be developed for information processing the which has guided the development of the computer industry for nearly I shift is to design and engineer a new generation ...

10 [Knowledge in quantum systems](#)

-  R. van der Meyden, Manas Paira
 June 2003 **TARK '03: Proceedings of the 9th conference on Theoretical as knowledge**
Publisher: ACM
 Full text available:  Pdf (1.09 MB) **Additional Information:** [full citation](#), [abstract](#),
Bibliometrics: Downloads (6 Weeks): 4, Downloads (12 Months): 25, Citation

This paper applies to quantum systems a modelling for the logic of know reasoning about distributed systems, but since then applied to game th artificial intelligence. A formal model of quantum ...


11 [New lattice-based cryptographic constructions](#)

-  Oded Regev
 November 2004 **Journal of the ACM (JACM)** , Volume 51 Issue 6
Publisher: ACM  [Request Permissions](#)
 Full text available:  Pdf (575.80 KB) **Additional Information:** [full citation](#), [abstract](#),
Bibliometrics: Downloads (6 Weeks): 18, Downloads (12 Months): 136, Citati

We introduce the use of Fourier analysis on lattices as an integral part c The tools we develop provide an elegant description of certain Gaussian points. Our results include two cryptographic ...

Keywords: Lattice, average-case hardness, cryptography, public key e


12 [New lattice based cryptographic constructions](#)

 Oded Regev

June 2003

STOC '03: Proceedings of the thirty-fifth annual ACM symposium

Publisher: ACM  [Request Permissions](#)

Full text available:  Pdf (366.52 KB)


[Additional Information:](#) full citation, abstract,

Bibliometrics: Downloads (6 Weeks): 2, Downloads (12 Months): 33, Citation

We introduce the use of Fourier analysis on lattices as an integral part of tools we develop provide an elegant description of certain Gaussian distributions. Our results include two cryptographic ...

Keywords: average-case hardness, cryptography, lattices, public key e


13 [Quantum information processing and communication: the computer :](#)

 Philippe Jorrand

March 2007

ACM-SE 45: Proceedings of the 45th annual southeast regional conference

Publisher: ACM  [Request Permissions](#)


Full text available:  Pdf (69.00 KB)

[Additional Information:](#) full citation, abstract,

Bibliometrics: Downloads (6 Weeks): 5, Downloads (12 Months): 51, Citation

Information is physical: the laws which govern its encoding, processing its unavoidable physical embodiment. In today's computing, information is Maxwell's classical physics: this assertion holds ...

14 [Quantum cryptography](#)

 D. Wiedemann

September 1986

SI GACT News, Volume 18 Issue 2

Publisher: ACM


Full text available:  Pdf (154.28 KB)

[Additional Information:](#) full citation, abstract,

Bibliometrics: Downloads (6 Weeks): 8, Downloads (12 Months): 54, Citation

An idea of Stephen Wiesner [1] is expanded to give a method of public key cryptography secure under the principles of quantum mechanics. It appears that this method can be implemented in favorable environments.

15 [High-level interconnect model for the quantum logic array architecture](#)

 Tzvetan S. Metodiev, Darshan D. Thaker, Andrew W. Cross, Isaac L. Chuang,

March 2008

Journal on Emerging Technologies in Computing System

Publisher: ACM  [Request Permissions](#)

Full text available:  Pdf (525.94 KB)

[Additional Information:](#) full citation, abstract,

Bibliometrics: Downloads (6 Weeks): 16, Downloads (12 Months): 201, Citation

We summarize the main characteristics of the quantum logic array (QLA) architecture, address the key issues not described in the original conference publications: quantum logic interconnect. The design goal ...

Keywords: QLA, Quantum computer architecture design, fault tolerance teleportation

- 16 [Quantum networks: from quantum cryptography to quantum architecture](#)
Tatjana Curcic, Mark E. Filipkowski, Almadena Chitchekanova, Philip A. D'A
Foster, Douglas Cochran

October 2004 **SIGCOMM Computer Communication Review**, Volume 34 Is
Publisher: ACM

Full text available:  Pdf (221.26 KB) Additional Information: [full citation](#), [abstract](#),

Bibliometrics: Downloads (6 Weeks): 17, Downloads (12 Months): 132, Citations

As classical information technology approaches limits of size and function for new paradigms for the distribution and processing of information. Our paper provides a broad view of the beginning ...

- 17 [Toward a world with quantum computers](#)

Dave Bacon, Debbie Leung

September 2007 **Communications of the ACM**, Volume 50 Issue 9

Publisher: ACM 

Full text available:  Html (27.03 KB),  Pdf (118.15 KB) Additional Information: [full citation](#), [abstract](#)

Bibliometrics: Downloads (6 Weeks): 48, Downloads (12 Months): 663, Citations

Surveying the recent past and projecting future developments and applications in quantum information science.

- 18 [An introduction to quantum computing for non-physicists](#)

September 2000 **Computing Surveys (CSUR)**, Volume 32 Issue 3

Publisher: ACM 

Full text available:  Pdf (491.89 KB) Additional Information: [full citation](#), [abstract](#),

Bibliometrics: Downloads (6 Weeks): 79, Downloads (12 Months): 792, Citations

Richard Feynman's observation that certain quantum mechanical effects on a computer led to speculation that computation in general could be carried out using these quantum effects. This speculation proved ...

Keywords: complexity, parallelism, quantum computing

- 19 [Communicating quantum processes](#)

Simon J. Gay, Rajagopal Nagarajan

January 2005 **POPL '05: Proceedings of the 32nd ACM SIGPLAN-SIGACT symposium on Programming Languages**

Publisher: ACM 

Full text available:  Pdf (247.88 KB) Additional Information: [full citation](#), [abstract](#),

Bibliometrics: Downloads (6 Weeks): 9, Downloads (12 Months): 68, Citations


We define a language CQP (Communicating Quantum Processes) for modeling quantum and classical communication and computation. CQP combines the pi-calculus with primitives for measurement and transformation ...

Keywords: formal language, quantum communication, quantum computation, verification

Also published in:


January 2005 **SIGPLAN Notices** Volume 40 Issue 1

20 [Tensor norms and the classical communication complexity of nonlocal](#)

 Yaoyun Shi

May 2005 **STOC '05: Proceedings of the thirty-seventh annual ACM symposium**

Publisher: ACM  [Request Permissions](#)

Full text available:  [Pdf](#) (202.30 KB)

Additional Information: [full citation](#), [abstract](#), [bibliography](#)

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 36, Citation

Nonlocality is at the heart of quantum information processing. In this paper, we show that the amount of classical communication required to simulate a nonlocal quantum correlation has general upper bounds, which in turn translate to ...

Keywords: bell inequality, classical simulation, communication complexity, quantum entanglement, tensor norms

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